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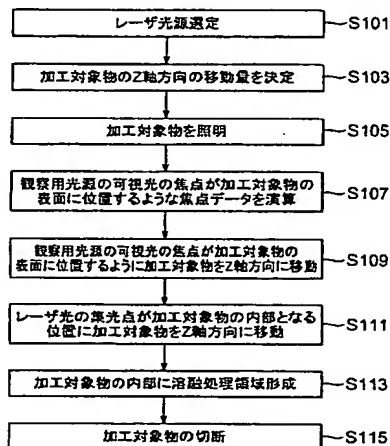
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- (51) 国際特許分類⁷: B23K 26/00 (72) 発明者; および
(75) 発明者/出願人 (米国についてののみ): 福世文嗣 (FUKUYO, Fumitsugu) [JP/JP]. 福満憲志 (FUKU-MITSU, Kenshi) [JP/JP]. 内山直己 (UCHIYAMA, Naoki) [JP/JP]. 和久田敏光 (WAKUDA, Toshimitsu) [JP/JP]; 〒435-8558 静岡県浜松市市野町1126番地の1 浜松ホトニクス株式会社内 Shizuoka (JP).
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- (74) 代理人: 長谷川芳樹, 外 (HASEGAWA, Yoshiki et al.); 〒104-0061 東京都中央区銀座二丁目6番12号 大倉本館 創英国際特許法律事務所 Tokyo (JP).
- (71) 出願人 (米国を除く全ての指定国について): 浜松ホトニクス株式会社 (HAMAMATSU PHOTONICS K.K.) [JP/JP]; 〒435-8558 静岡県浜松市市野町1126番地の1 Shizuoka (JP).
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(54) Title: LASER BEAM MACHINING METHOD AND LASER BEAM MACHINING DEVICE

(54) 発明の名称: レーザ加工方法及びレーザ加工装置



S101...SELECTION OF LASER BEAM SOURCE

S103...DETERMINATION OF MOVING AMOUNT OF WORK IN Z-AXIS DIRECTION

S105...ILLUMINATION OF WORK

S107...CALCULATION OF SUCH FOCUS POINT DATA THAT FOCUS POINT OF VISIBLE LIGHT OF LIGHT SOURCE FOR OBSERVATION IS POSITIONED ON SURFACE OF WORK

S109...MOVEMENT OF WORK IN Z-AXIS DIRECTION SO THAT VISIBLE LIGHT OF LIGHT SOURCE FOR OBSERVATION IS POSITIONED ON SURFACE OF WORK

S111...MOVEMENT OF WORK IN Z-AXIS DIRECTION TO SUCH A POSITION THAT CONDENSED POINT OF LASER BEAM COMES INSIDE WORK

S113...FORMATION OF FUSING PROCESSING AREA INSIDE WORK

S115...CUTTING OF WORK

(57) Abstract: A laser beam machining method and a laser beam machining device capable of cutting a work without producing a fusing and a cracking out of a predetermined cutting line on the surface of the work, wherein a pulse laser beam (L) is radiated on the predetermined cut line (5) on the surface (3) of the work (1) under the conditions causing a multiple photon absorption and with a condensed point (P) aligned to the inside of the work (1), and a modified area is formed inside the work (1) along the predetermined cut line (5) by moving the condensed point (P) along the predetermined cut line (5), whereby the work (1) can be cut with a rather small force by cracking the work (1) along the predetermined cut line (5) starting from the modified area and, because the pulse laser beam (L) radiated is not almost absorbed onto the surface (3) of the work (1), the surface (3) is not fused even if the modified area is formed.

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